

FEDERAL MINE SAFETY AND HEALTH REVIEW COMMISSION

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May 16, 2005

SECRETARY OF LABOR,	:	
MINE SAFETY AND HEALTH	:	
ADMINISTRATION (MSHA)	:	
	:	Docket No. SE 2002-126
v.	:	
	:	
U.S. STEEL MINING COMPANY, L.L.C.	:	

BEFORE: Duffy, Chairman; Jordan, Suboleski, and Young, Commissioners

DECISION

BY: Duffy, Chairman; and Young, Commissioner

In this civil penalty proceeding arising under the Federal Mine Safety and Health Act of 1977, 30 U.S.C. § 801 et seq. (2000) (“Mine Act” or “Act”), Administrative Law Judge Gary Melick determined that U.S. Steel Mining Company (“U.S. Steel”) violated 30 C.F.R. § 77.404(a).¹ 25 FMSHRC 227 (Apr. 2003) (ALJ). U.S. Steel filed a petition for discretionary review, which the Commission granted. For the reasons that follow, we vacate and remand.

I.

Factual and Procedural Background

U.S. Steel operates the Concord coal preparation plant located in Jefferson County, Alabama. The plant utilizes a thermal dryer and a granular coal injection (“GCI”) system to process and transport coal. 25 FMSHRC at 228. Coal is dried in the preparation plant in the

¹ Section 77.404(a) provides:

Mobile and stationary machinery and equipment shall be maintained in safe operating condition and machinery or equipment in unsafe condition shall be removed from service immediately.

thermal dryer. *Id.* The fine coal particles are then entrained² as air passes through the coal on the thermal dryer's fluidized bed. *Id.* These coal particles are then removed from the air by passing through several downstream cyclones and are discharged through rotary air locks into the GCI system. *Id.* Once in the GCI system, which consists of two independent and parallel conveying systems, the fine coal is conveyed to a sizing screen and then stored in a retention bin before it is loaded onto railcars. *Id.*; R. Exs. D, I. The atmosphere in the GCI system is enclosed and separated from the air in the rest of the facility. Tr. 87.

During this process, coal dust and methane are produced. 25 FMSHRC at 228. In order to prevent combustion, the oxygen content in the GCI system is reduced by injecting nitrogen into the system at various locations where air enters the system.³ *Id.* at 228, 230. Oxygen levels are monitored by gas analyzers at three sampling points within the system. *Id.* at 228. When the oxygen level reaches 7%, the sensors trigger a "high alarm" warning on a computer screen in the computer control room. *Id.* at 228; R. Ex. A; Tr. 156. If 10% oxygen is detected, a "high-high alarm" is signaled and the screw conveyors feeding coal fines⁴ into the GCI system are reversed, effectively shutting down the system. 25 FMSHRC at 228; R. Ex. A; Tr. 157-58. If a sensor detects oxygen at a level of 12%, an "extreme high" warning is displayed and the screw conveyors are reversed. R. Ex. A; Tr. 209. The GCI system is not operated if the sensors are disabled. R. Ex. C at 1; Tr. 206, 209.

On August 10, 1999, MSHA conducted an on-site evaluation of the GCI system. R. Ex. I at 1.⁵ The evaluation was undertaken to address a series of concerns about the GCI system raised by the United Mine Workers of America ("UMWA"). *Id.* at 3-4. MSHA engineer and ventilation specialist Clete Stephan, accompanied by several other MSHA personnel, performed the study "to determine the conditions under which the GCI [system] can be safely operated." *Id.*

² Entrainment is defined as "[t]he process of picking up and carrying along." Am. Geological Institute, *Dictionary of Mining, Mineral, and Related Terms* 188 (2d ed. 1997) ("DMMRT").

³ The oxygen content of air is 20.9%. R. Ex. I at 2. A fire or explosion involving methane at an explosive concentration can result when the oxygen level is 12% or greater. *Id.* at 1-2. A fire or explosion involving coal dust can result when oxygen level is 13% or greater. *Id.*

⁴ Fines are "[f]inely crushed or powdered material, e.g., of coal." *DMMRT* at 208.

⁵ In this decision, "R. Ex. I" refers to a report prepared by the Department of Labor's Mine Safety and Health Administration ("MSHA") on the Concord plant's GCI system dated June 30, 2000, along with cover memoranda. We note that there appears to be some confusion in the official file and the transcript regarding the proper designation of this exhibit. The judge should clarify this confusion on remand. In the same vein, the transcript in this case contains numerous errors and is particularly difficult to follow. We remind both judges and parties to take the time to review transcripts of hearings and to correct any mistakes.

at 1. Some 10 months after his on-site visit, Stephan issued a report in the form of a memorandum, dated June 30, 2000, in which he summarized his findings regarding the GCI system (hereafter “the June 2000 Report”). *Id.* The report was sent to U.S. Steel by MSHA on July 26, 2000. *Id.*

Stephan’s report concluded that the operation of the gas analyzers is “a critical safety feature of the GCI” because the analyzers continuously monitor the air and automatically cause injection of nitrogen into the system. *Id.* at 2. The report noted “28 separate locations where leakage from the GCI was occurring” and stated that prudent engineering practice indicated that the leaks should be sealed because “[t]he nitrogen rich atmosphere and coal from inside the GCI was apparently leaking to the outside environment.” *Id.* at 5. In addressing the effect of the leaks on the atmosphere inside the GCI system, the report stated that “[t]he explosion hazards inside the GCI [are] negated when operating in an atmosphere with less than 12 percent oxygen. Maintaining dependable gas analyzers . . . will assure that the oxygen content remains insufficient for combustion.” *Id.*

On March 7, 2002, MSHA Inspector Larry Richardson observed that the monitors at the preparation plant showed high oxygen levels at two locations within the GCI, i.e., 7.2% oxygen at one conveyor and 7.5% oxygen at another. 25 FMSHRC at 228. Upon inspection of the GCI system, Richardson observed a half-inch-wide hole in the side of one of the conveyors located approximately 10 feet above the walkway. *Id.* The hole resulted from a bolt having been sheared. *Id.* The inspector testified that for approximately 10 minutes, he observed fine, dry coal coming out of the hole and then the coal would stop. *Id.*; Tr. 28-29. He assumed that, when the coal stopped coming out of the hole, air was entering the GCI system. Tr. 48-49. He estimated that coal was emitted from the hole for approximately 20 seconds at a time and then air entered for 1 to 2 minutes. 25 FMSHRC at 228; Tr. 29. Richardson did not conduct any testing to determine what amount of air, if any, was entering the hole. Tr. 48.

As a result of his observations, the inspector issued Citation No. 7672461, which alleged a violation of 30 C.F.R. § 77.404(a). Gov’t Ex. 2. The citation charged, in pertinent part, that the GCI system “was not being maintained in safe operating condition” because “[f]or this system to operate safely the atmosphere inside must remain inert and separated from the air in the outside atmosphere,” and the half-inch hole allowed seepage of outside air into the system. *Id.*; 25 FMSHRC at 227. A U.S. Steel foreman immediately arranged to have the hole plugged, and the cited condition was abated within 15 minutes. 25 FMSHRC at 228. The Secretary proposed a civil penalty for the violation, which U.S. Steel contested. The case proceeded to a hearing before Judge Melick.

The judge, citing *Alabama By-Products Corp.*, 4 FMSHRC 2128, 2129 (Dec. 1982), ruled that section 77.404(a) was not ambiguous and that U.S. Steel had adequate notice of the provision’s requirements. 25 FMSHRC at 229. The judge credited the testimony of MSHA’s expert witness Clete Stephan, who testified that, until the 20.9% level of oxygen from the surrounding air that was entering the cited hole was diluted to less than 12%, an explosion hazard

existed, and the GCI system was unsafe. *Id.* at 229-30. The judge then applied the “reasonably prudent person” test contained in *Alabama By-Products* to each of the elements of Stephan’s opinion testimony and concluded that the unintended half-inch hole created a danger by allowing air to enter the cited hole and that a reasonably prudent person would have recognized that this created a hazard warranting corrective action. *Id.* at 229-30. The judge assessed a \$55 penalty. *Id.* at 231.

II.

Disposition

U.S. Steel argues that the judge misapplied the “reasonably prudent person” standard. PDR at 1-2. It claims that a reasonably prudent person could not have recognized that a hole caused by a single missing bolt, out of thousands of bolts in the GCI system, would render the system unsafe. *Id.* at 2. U.S. Steel contends that the testimony of the Secretary’s expert, Clete Stephan, was unsubstantiated because neither he nor the inspector took any measurements or performed any tests as to the amount of oxygen entering the GCI. *Id.* at 3-4, 7-8; Reply Br. at 4. It argues that Stephan’s testimony contradicted the June 2000 Report that he prepared in assessing the GCI system. PDR at 7. In addition, U.S. Steel challenges the judge’s “inferences” that: (1) air containing 20.9% oxygen entered the hole; (2) such oxygen would not be diluted immediately, and (3) there would be greater than a 13% oxygen concentration and an area large enough to support a fire or explosion inside the hole. PDR at 3. U.S. Steel also asserts that the judge erred by not discussing the testimony of its expert witness, John Hedrick, and comparing it to that of Stephan. PDR at 8-9.

The Secretary responds that the judge correctly applied the reasonably prudent person test. S. Br. at 7-10. In addition, she asserts that the judge’s finding of a violation of section 77.404(a) is supported by substantial evidence. *Id.* at 10-17. The Secretary submits that the judge did not abuse his discretion in crediting the testimony of MSHA’s expert witness over the conflicting testimony of U.S. Steel’s expert. *Id.* at 17-35. Thus, she urges that the judge’s decision be affirmed. *Id.* at 35.

Section 77.404(a) provides that machinery and equipment shall be maintained in a “safe operating condition.” The Commission has construed the language of the regulation as imposing two requirements: (1) to maintain machinery and equipment in safe operating condition, and (2) to remove unsafe equipment from service. *See Peabody Coal Co.*, 1 FMSHRC 1494, 1495 (Oct. 1979) (interpreting identical language in the predecessor regulation to section 77.404(a)). In this case, the MSHA inspector cited U.S. Steel as a result of the half-inch-wide hole in the conveyor caused by the loss of a single bolt. MSHA believed that, for the GCI system to operate safely, the atmosphere inside the system must be entirely separate from the air outside the system. *See Gov’t Ex. 2*. The judge concluded that, in order to prevail, the Secretary must prove that a reasonably prudent person familiar with the GCI system and the facts surrounding the cited condition would have recognized that the half-inch hole was a hazard warranting corrective

action. 25 FMSHRC 229-30. The primary issues before the Commission are whether the judge properly applied the reasonably prudent person test and whether substantial evidence supports the judge's decision.

In order to avoid due process problems stemming from an operator's asserted lack of notice, the Commission has adopted an objective measure (the "reasonably prudent person" test) to determine if a condition is violative of a broadly worded standard. That test provides:

[T]he alleged violative condition is appropriately measured against the standard of whether a reasonably prudent person familiar with the factual circumstances surrounding the allegedly hazardous condition, including any facts peculiar to the mining industry, would recognize a hazard warranting corrective action within the purview of the applicable regulation.

Alabama By-Products, 4 FMSHRC at 2129; *See also Asarco, Inc.*, 14 FMSHRC 941, 948 (June 1992). As the Commission stated in *Ideal Cement Co.*, 12 FMSHRC 2409, 2416 (Nov. 1990), "in interpreting and applying broadly worded standards, the appropriate test is not whether the operator had explicit prior notice of a specific prohibition or requirement," but whether a reasonably prudent person would have ascertained the specific prohibition of the standard and concluded that a hazard existed. The reasonably prudent person is based on an "objective standard." *U.S. Steel Corp.*, 5 FMSHRC 3, 5 (Jan. 1983). The Commission has recognized that the various factors, bearing upon what a reasonably prudent person would know and conclude, include accepted safety standards in the field, considerations unique to the mining industry, and the circumstances at the operator's mine. *BHP Minerals Int'l, Inc.*, 18 FMSHRC 1342, 1345 (Aug. 1996).

Based on our review of the record, we agree that the reasonably prudent person test was not properly applied in this case and that the case should be remanded to the judge. First, as discussed below, the judge did not apply the reasonably prudent person test as an objective test based on the existing factual circumstances. Second, the judge did not consider all the factors bearing on the reasonably prudent person test. In particular, he did not consider or even mention the June 2000 Report on the Concord plant's GCI system (R. Ex. I) prepared by MSHA's expert witness, Clete Stephan. In addition, the judge did not discuss or reconcile the testimony of U.S. Steel's expert witness, John Hedrick, in crediting Stephan's testimony.

The Commission has explained that the reasonably prudent person test must be based on conclusions drawn by an objective observer with knowledge of the relevant facts. *U.S. Steel Corp.*, 5 FMSHRC at 4-5. It follows that the facts to be considered must be those which were reasonably ascertainable prior to the alleged violation. Moreover, the test must be applied based on the totality of the factual circumstances involved, not just those which tend to favor one party or the other. *Asarco*, 14 FMSHRC at 949.

In this case, the judge erred in the way he applied the reasonably prudent person test. The judge separately considered in turn specific opinions of MSHA’s expert witness, Clete Stephan, as set forth in the trial testimony and determined whether it was reasonable to credit each of those opinions. The judge then credited each of those opinions and further determined that the reasonably prudent person would have also “inferred” that each of those opinions was reasonable. 25 FMSHRC at 230.⁶ Thus, instead of considering all the factual circumstances concerning the hole in the GCI system from the perspective of an objective observer, the judge limited his analysis to the opinions of MSHA’s expert and determined whether those opinions were reasonable. Under the approach used by the judge in attempting to apply the reasonably prudent person test, the judge essentially treated the MSHA expert as the reasonably prudent person, rather than viewing the facts from the perspective of an objective observer.

In *Alan Lee Good d/b/a Good Construction*, 23 FMSRHC 995 (Sep. 2001), the Commission addressed a similar situation involving application of the reasonably prudent person test, and that language applies in this case as well:

The judge “inferred” that the inspector was a reasonably prudent person familiar with the mining industry and the protective purposes of this standard, and that consequently his testimony sufficed to prove that adequate notice existed, pursuant to the criteria in *Ideal Cement*. 22 FMSHRC at 1082. The “reasonably prudent person” test, however, is an objective standard. *BHP*, [18 FMSHRC at 1342.] Relying solely on the testimony of the inspector to determine whether an operator had fair notice of a regulation’s requirements (as the judge did in this case) transforms this analysis into a subjective inquiry based on the views of an MSHA inspector. Although an inspector’s views are generally relevant to the notice inquiry, they do not automatically equate to what the prototypical “reasonable person” would conclude about the scope of the guarding requirements at issue here. . . .

Id. at 1004-05 (separate opinion of Commissioners Jordan and Beatty). The same concerns apply to the manner in which the judge in the instant case treated the testimony of the Secretary’s expert witness, Stephan, upon which the judge based his finding of a violation. Because the judge failed to apply the reasonably prudent person test from the perspective of an objective observer, the case must be remanded for proper application of the test.

The judge also erred in his analysis by failing to consider countervailing opinion testimony by U.S. Steel’s expert witness, John Hedrick, a mining engineer who participated in

⁶ For example, the judge’s opinion states at one point: “I further credit [Mr. Stephan’s] expert testimony, and it is reasonable for the objective reasonably prudent person to infer, that the half-inch hole permitted a sufficient amount of air to enter the GCI system to create an area with greater than 13% oxygen concentration and an area large enough to support a fire or explosion.” 25 FMSHRC at 230.

designing the GCI system. For example, Mr. Hedrick testified that any oxygen that entered the system through the hole in question would not be a safety concern because sensors would shut down the system if the oxygen level ever reached 10%. Tr. 185-88. He also testified that, although the GCI system is an enclosed system, it was never designed to be “airtight.” Tr. 177-80. Although Stephan’s opinion testimony conflicted with Hedrick’s opinion testimony in several key respects, the judge never explained why he credited Stephan’s testimony rather than Hedrick’s testimony. Indeed, he did not even mention Hedrick’s testimony in his decision. The Commission has made clear that, when the reasonably prudent person test is being applied and “the opinions of expert witnesses conflict in a proceeding, the judge must determine which opinion to credit, based on such factors as the credentials of the expert and the scientific bases for the expert’s opinion. In such cases, the judge should set forth in the decision the reasons for crediting one expert’s opinion over that of another.” *Asarco*, 14 FMSHRC at 949. As discussed below, Hedrick’s testimony should be discussed and evaluated on remand.

Furthermore, on remand, the judge should exercise caution in attributing opinions set forth in trial testimony to the reasonably prudent person. The reasonably prudent person test is an objective one. Although an expert’s opinion will presumably be based on certain facts, the opinion itself will be subjective in part by its very nature. Experts can reasonably reach different opinions based on identical facts and frequently do so. Accordingly, unless only one opinion can be drawn from a given set of facts, opinion testimony should ordinarily be given somewhat limited weight in determining what a reasonably prudent person would conclude in a particular situation. For example, in the instant case, it was undisputed that neither Stephan nor MSHA Inspector Richardson had conducted any actual testing, simulation, or computational analysis of the GCI system to verify their opinions regarding the extent to which air would enter the hole in question, what volume of oxygen would be released into the system, and how far the oxygen would travel before being diluted. Tr. 47, 115-17, 120, 123; 25 FMSHRC at 230. In applying the reasonably prudent person test on remand, the judge should consider and expressly address the lack of objective test data in determining what weight to give such opinion testimony in the context of all the other factors concerning the safety of the GCI system.⁷

⁷ “[A] trial judge must ensure that . . . scientific testimony or evidence admitted is not only relevant, but reliable.” *In re: Contests of Respirable Dust Sample Alteration Citations*, 17 FMSHRC 1819, 1843 (Nov. 1995), *aff’d sub nom., Sec’y of Labor v. Keystone Coal Mining Corp.*, 151 F.3d 1096 (D.C. Cir. 1998) (“*Dust Cases*”), quoting *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 589 (1993). A judge must analyze and weigh the relevant testimony of record, make appropriate findings, and explain the reasons for his decision. *Mid-Continent Res., Inc.*, 16 FMSHRC 1218, 1222 (June 1994) (remanding to the judge where he “failed to address adequately the evidentiary record . . .”). Ultimately, the question still remains whether a reasonably prudent person with knowledge of the facts and circumstances would conclude that a half-inch hole in the GCI system, which may have permitted air to enter the system, created a danger or hazardous condition rendering the system unsafe.

In addition to failing to apply the reasonably prudent person test from the perspective of an objective observer and thereby giving undue weight to Stephan's opinion testimony, the judge erred by failing to consider important factors of which a reasonably prudent person would have been aware. As explained above, the Commission has indicated that the factors of which a reasonably prudent person would be aware include, among other things, accepted safety standards in the field, considerations unique to the mining industry, and the circumstances at the operator's mine. *BHP*, 18 FMSHRC at 1345. Those factors would also certainly include any MSHA announcements or policy memoranda relevant to the alleged hazard that were made publicly available or brought to the attention of the operator. *Good*, 23 FMSHRC at 1005. In this case, some of the factors that are relevant to the inquiry include the operating procedures for the GCI system (R. Ex. C) and MSHA's June 2000 Report on the safety of the GCI system (R. Ex. I). However, the judge's opinion does not address either of those documents, let alone evaluate their impact on what a reasonably prudent person would conclude concerning a possible hazard from the half-inch-wide hole in the GCI system.

In particular, the June 2000 Report (R. Ex. I), which was prepared by Clete Stephan, the Secretary's expert witness, specifically addresses the safety of the Concord plant's GCI system and therefore is a key document bearing upon what a reasonably prudent person would conclude regarding the effect of the hole in the system. The report contains Stephan's conclusions and recommendations based on his visit to the plant to evaluate the GCI system in August 1999.⁸ The June 2000 Report notes that, at the time of the evaluation, there were 28 holes in the GCI system. *Id.* at 5. At least one of the 28 holes was similar to the hole in question. Tr. 125. The report states that the 28 openings should be sealed. However, the report recommends sealing the holes in the portion of the report that deals with preventing coal dust and nitrogen from escaping from the system and posing hazards outside the system, rather than as a means of preventing combustion hazards inside the system. R. Ex. I at 5. With regard to possible explosion hazards inside the system, the report notes that "[t]he explosion hazards inside the GCI [are] negated when operating in an atmosphere with less than 12 percent oxygen. Maintaining dependable gas analyzers, or other no less effective means to determine oxygen content, will assure that the oxygen content remains insufficient for combustion." *Id.* The report does not appear to conclude that the 28 holes pose a significant risk of a combustion hazard occurring inside the system. Despite the fact that the report addresses safety concerns at the GCI system, the judge failed to discuss the report or relevant trial testimony addressing the report in his opinion.⁹

⁸ Stephan testified at the trial that he believed that the system had not changed since his earlier visit. Tr. 118, 128.

⁹ Our dissenting colleague argues that we have misconstrued the June 2000 Report authored by Stephan and that the report is not a factor that a reasonably prudent person would have considered in determining whether a single hole in the GCI system constituted a hazard. Slip op. at 17. According to the dissent, this is because there is no evidence that Stephan observed any leaks at the locations where the UMWA complained that 28 leaks existed. *Id.* First of all, it is irrelevant whether Stephan actually observed the leaks: his report is unquestionably

In addition to the contents of the report itself, the judge should have considered the circumstances involving MSHA's handling of the June 2000 Report, which was not sent to U.S. Steel until July 2000, nearly a year after Stephan's visit to the Concord plant in August 1999. This delay appears to belie the purportedly hazardous nature of a single hole in the system. If there had been such an "obvious" combustion danger resulting from a single hole in the system, as the judge found (25 FMSHRC at 230), MSHA presumably would not have waited a year to inform U.S. Steel of such a hazard when 28 holes in the system had existed at the time Stephan visited in 1999. The judge should have considered MSHA's lack of urgency in addressing leaks in the GCI system occurring on a far larger scale than the single hole at issue here under the reasonably prudent person test because it was one of the relevant circumstances at the operator's mine. *See BHP*, 18 FMSHRC at 1345. On remand, the judge must address the significance of MSHA's delay in issuing the report.

There is at least one other record issue that needs to be addressed further by the judge on remand. Stephan testified that "hypothetically . . . the injection of nitrogen would most likely be able to take care of any increased oxygen in the system within about ten or fifteen feet of conveyance [sic], at the most." Tr. 152. Stephan also opined that the hole was 50 or 60 feet away from the nearest nitrogen injector. *Id.* However, U.S. Steel's expert Hedrick, who participated in the design of the GCI system, testified that the nearest nitrogen injector was 12 to 20 feet away from the cited hole. Tr. 189, 205 (testifying that one injector was 15 to 20 feet from the hole and another injector was 12 to 13 feet from the hole). The judge never discussed this testimony nor how far the nitrogen injector was from the hole. This testimony is probative as to whether oxygen entering the cited hole was sufficiently diluted by nitrogen and should be weighed by the judge in determining the existence of a violation in the first instance.¹⁰ *See*

based on the existence of 28 leaks in the GCI system and addresses the extent to which they might pose hazards. R. Ex. I at 5. Second, Stephan's June 2000 Report clearly indicates that he observed the 28 leaks during his August 1999 evaluation of the GCI system. For example, he states in the report that "[t]he accumulations of float coal dust, *that were observed during the evaluation*, occurred outside the GCI in the immediate vicinity of each particular leak." *Id.* (emphasis added). The dissent actually highlights the inconsistencies both within the report and between Stephan's trial testimony and the contents and nature of his prior report, which are significant for purposes of applying the reasonably prudent person standard. At the very least, because the June 2000 Report discusses leaks in the GCI system at the Concord plant, the judge, on remand, must consider and discuss the report as an important factor that a reasonably prudent person would consider in determining whether a single hole in the GCI system constituted a hazard.

¹⁰ Furthermore, the June 2000 Report appears to be inconsistent with Stephan's testimony that the sensors would not have adequately assured against excess oxygen entering from the cited hole. Tr. 105-10. The judge did not discuss the June 2000 Report in relation to this apparent inconsistency. *Mid-Continent*, 16 FMSHRC at 1222 (remanding for further analysis where judge failed to adequately address evidentiary record).

Vermont Unfading Green Slate Co., 24 FMSHRC 439, 441-42 (May 2002) (remanding for the analysis of all probative evidence). It appears that Stephan's own testimony would not support a finding that the system was, in fact, unsafe if the nitrogen injectors would "most likely be able to take care of any increased oxygen" entering within the range of the nitrogen injectors.¹¹ Tr. 152. Nevertheless, the judge who heard the testimony is in the best position to interpret the facts of record and to determine whether the Secretary has carried her burden of proof. *Mid-Continent*, 16 FMSHRC at 1222 (providing that substantial evidence standard of review requires that a fact finder weigh all probative evidence) (citing *Universal Camera Corp. v. NLRB*, 340 U.S. 474, 487-89 (1951)).

In sum, on remand, the judge must apply the reasonably prudent person test from the perspective of an objective observer who considers the totality of factual circumstances relevant to the alleged hazard resulting from the hole in the GCI system.¹² In doing so, he must discuss and evaluate all conflicting testimony and evidence that is relevant to this inquiry.

¹¹ Commissioner Young believes that this failure to establish that the machinery in question was actually not in safe operating condition would be a fatal defect in the Secretary's case under the language of the standard.

¹² The dissent's suggestion, slip op. at 17-18 & n.5, that, under our analysis, MSHA cannot issue a citation until explosive levels of oxygen are verified or until the violation is considered "significant and substantial" misconstrues our opinion. Nothing in our decision that addresses either the presence of a violation *or* the question of notice mandates such an occurrence before MSHA can issue a citation. Rather, as in many Commission cases, we address whether the Secretary carried her burden of proof on the issues before us in light of conflicting opinion testimony and the June 2000 Report. *See, e.g., Asarco*, 14 FMSHRC at 949. The issue of testing (or any objective basis for gauging the volume of air entering the hole) is pertinent because the absence of objective data undercuts Stephan's opinion that a single hole made the GCI unsafe. Finally, the dissent's reliance on the low penalty amount (\$55), slip op. at 16 n.3 & 17, to reflect a lower hazard level from a single hole does not result in a diminished burden of proof for the Secretary.

III.

Conclusion

For the foregoing reasons, we vacate and remand the judge's finding of violation of section 77.404(a), consistent with the instructions contained in this decision.

Michael F. Duffy, Chairman

Michael G. Young, Commissioner

Commissioner Suboleski, concurring:

While I join with my colleagues in remanding this case to the judge, I also believe there are sufficient grounds for reversal based on the contradiction between Clete Stephan's trial testimony and his earlier written report, and the actions that he took at that time.

Because there were no measurements taken, or any factual estimations made, the Secretary is faced with two burdens. First, she must establish that a safety hazard actually existed, and then she must show that a reasonably prudent person familiar with the situation would recognize such a danger. Stephan opined that such a danger existed and the judge credited his testimony. The judge then concluded that a reasonably prudent person would "easily" have identified that an unplanned (1/2 inch) hole would make the system unsafe.¹

Stephan, as the judge affirmed, is one of the leading experts in mining-related fires and explosions. As such, with regard to fire and explosion hazards, if he cannot recognize a danger, then a reasonably prudent person familiar with mining certainly could not be expected to do so. Stephan earlier examined this facility with the express purpose of determining dangerous conditions.² He found 28 points of leakage, at least one of which was similar to the bolt hole in the current case (Tr. 125), yet waited approximately 10 months to issue a report. I have no doubt that, if he had recognized that an unsafe condition existed, Stephan would have taken action immediately.³ If he did not recognize a danger with 28 holes, then a reasonably prudent person could not be expected to do so with a single hole.

Further, the conclusion reached by Stephan in his previous written report renders inapposite his statements and conclusions during the trial. In this report, Stephan states: "The explosion hazards inside the GCI is [sic] negated when operating in an atmosphere with less than 12 percent oxygen. Maintaining dependable gas analyzers . . . will assure that the oxygen content remains insufficient for combustion." R. Ex. I at 5. If dependable analyzers and a system with no leaks were both necessary for safe operation, it is reasonable to assume that Stephan would

¹ The judge actually made a two-part conclusion from this. First, that a reasonably prudent person would identify that an unplanned hole warranted corrective action. Second, that the GCI system was not maintained in a safe operating condition. 25 FMSHRC 227, 230 (Apr. 2003) (ALJ). However, simply because the first conclusion is true, it does not follow that the second is also true. That is, an unplanned hole might also be recognized as needing corrective action as part of normal maintenance but not necessarily because it is by itself a hazard.

² Stephan testified that he did not revisit the facility before the trial because the system had not changed since this earlier visit. Tr. 114-15, 128.

³ The report did not determine that the 28 holes were an explosion or fire hazard. It recommended sealing the holes, but did so in the section dealing with escaping coal dust and nitrogen, evidencing a concern with the atmosphere outside, rather than inside, the GCI. R. Ex. I at 5.

have said so in his report. Instead he discusses the leakage only in connection with leakages *from* the system, not leakages into the system.

Although Stephan attempted to explain the difference in the report conclusion and his trial opinion at three different points during the trial, contradictions such as this must detract from the weight given to an expert's opinion. *See In re: Contests of Respirable Dust Sample Alteration Citations*, 17 FMSHRC 1819, 1843-44 (Nov. 1995), *aff'd sub nom., Sec'y of Labor v. Keystone Coal Mining Corp.*, 151 F.3d 1096 (D.C. Cir. 1998). In this instance, there is a direct contradiction between the conclusions reached in Stephan's pre-litigation written report and his trial testimony.

Finally, the judge credits Stephan's testimony that the half-inch hole permitted "an area [of oxygen] large enough to support a fire or explosion." 25 FMSHRC at 230. Yet, I find no testimony by Stephan regarding the creation of an area (more correctly, a volume) of oxygen sufficient to support a fire or explosion. Because such a volume is a requirement for a fire or explosion, perhaps the judge inferred this conclusion from Stephan's testimony that a hazard existed. However, Stephan did not testify directly on this critical point, and it is not apparent to me that such an inference could be drawn from any record evidence. *See Mid-Continent Res., Inc.*, 6 FMSHRC 1132, 1138 (May 1984). The absence of direct testimony by Stephan on this crucial factor is not a trivial omission.

Stanley C. Suboleski, Commissioner

Commissioner Jordan, dissenting:

I believe that substantial evidence supports the judge's finding that U.S. Steel violated 30 C.F.R. § 77.404(a), which required it to maintain the granular coal injection ("GCI") system in safe operating condition. Accordingly, I disagree with the majority's opinion vacating and remanding this case and would affirm the judge's decision.

The judge based his conclusion on two salient facts: first, that it was "undisputed that the GCI system . . . was intended and designed to safely operate only as an enclosed system with an inert atmosphere," and second, that "an unintended half-inch hole was created in the GCI system." 25 FMSHRC 227, 230 (Apr. 2003) (ALJ). He relied on the Secretary's expert witness, Clete Stephan, who explained that the GCI enclosure contains coal dust and methane, and that an ignition source could arise from metal to metal contact exceeding combustion temperatures. *Id.* at 229. Since, as Stephan noted, a fire or explosion may result when the right mixture of fuel, heat, and oxygen exists, the oxygen concentration within the GCI system must be kept below 12% in order to prevent that dangerous combination from occurring. *Id.* Stephan explained that the system was enclosed to prevent the 20.9% oxygen content of the surrounding air from entering the system. *Id.* In his view, the cited hole made the system unsafe because until such time as the oxygen entering the system was diluted, an explosion hazard existed. *Id.*¹

U.S. Steel contends that it could not have been expected to recognize that a hole caused by a single missing bolt out of thousands of bolts in the GCI system would render the system unsafe. PDR at 2. In considering whether an operator had sufficient notice of its obligations under a broadly worded standard such as the one at issue here, the Commission determines "whether a reasonably prudent person familiar with the factual circumstances surrounding the allegedly hazardous condition, including any facts peculiar to the mining industry, would recognize a hazard warranting corrective action within the purview of the applicable regulation." *Alabama By-Products Corp.*, 4 FMSHRC 2128, 2129 (Dec. 1982).

I disagree with my colleagues' determination that the judge misapplied our "reasonably prudent person" standard. I believe he properly applied the test, which is to say that he applied it in an objective manner, based on the existing factual circumstances. The judge likened the instant situation to the cited condition in *Alabama By-Products*, noting that in both cases defects in the operating equipment increased the possibility that a friction source, coal dust, and oxygen might combine in sufficient quantities to create a dangerous situation. 25 FMSHRC at 230. In *Alabama By-Products*, 13 frozen rollers on the bottom of the No.1 belt conveyor provided a friction source that could lead to a heat buildup. 4 FMSHRC at 2128, 2131. The risk was that

¹ The judge found the testimony of MSHA's expert credible. 25 FMSHRC at 230. The Commission does not overturn such a determination unless we find an abuse of discretion. *In re: Contests of Respirable Dust Sample Alteration Citations*, 17 FMSHRC 1819, 1843-44 (Nov. 1995), *aff'd sub nom., Sec'y of Labor v. Keystone Coal Mining Corp.*, 151 F.3d 1096 (D.C. Cir. 1998). Nonetheless, my colleagues take the extraordinary step of declining to affirm the judge's credibility finding. Slip op. at 5-10.

coal falling off the belt could accumulate near the frozen rollers, and be ignited by the heat produced by those rollers. *Id.* at 2131. The Commission observed that the danger posed by a friction source in an area where coal accumulations could occur is “obvious,” and concluded that a reasonably prudent person would recognize that the cited equipment was in an unsafe condition. *Id.*

As in *Alabama By-Products*, the hazard in this case involves the danger posed when the three ingredients needed to sustain a fire or an explosion – sufficient oxygen, fuel, and an ignition source – come into close proximity. 25 FMSHRC at 229-30. In the instant case, the oxygen level within the enclosure is the only factor the operator can control, as the other two elements are always present within the GCI system. Tr. 84-87. The judge relied on Stephan’s testimony that “the safe operation of the system is only based on the fact that no leaks would exist in the system. No unplanned openings or . . . holes into the system.” Tr. 146; 25 FMSHRC at 230. Stephan explained that the unplanned half-inch hole permitted air containing 20.9% oxygen to enter the system although “there’s no way of knowing how much oxygen is actually getting in there” Tr. 109-10. The judge found that “the inferences made by MSHA’s expert, Clete Stephan, were rational and were sufficient to prove that unsafe levels of oxygen were in fact entering the GCI system, *and that the same inferences would be made by any objective reasonably prudent person.*” 25 FMSHRC at 230 (emphasis added).

My colleagues complain that the judge essentially treated the MSHA expert as the reasonably prudent person, rather than viewing the facts from the perspective of an objective observer. Slip op. at 5-6. However, the judge did not simply equate the expert’s testimony with that of a reasonably prudent person. He considered the fact that a reasonably prudent person would recognize the danger inherent when the elements of an ignition or explosion exist in close proximity. That danger, as the judge noted is “obvious.” 25 FMSHRC at 230. *See also Alabama By-Products*, 4 FMSHRC at 2131. The hole increased the possibility that the elements might combine in the right mixture. 25 FMSHRC at 230. The judge found Stephan’s testimony credible on this point but he also specifically noted that the same conclusion would have been drawn by a reasonably prudent person. *Id.*

My colleagues also state that the testimony of an expert witness should ordinarily be accorded only limited weight in applying the “reasonably prudent person” test. Slip op. at 7. This is not consistent with our past precedent. For example, in applying that same test in *Asarco, Inc.*, 14 FMSHRC 941 (June 1992), we ruled that the judge erred in finding that the operator violated a regulation requiring the examination and testing of ground conditions. We took into account the testimony of the operator’s expert witnesses who testified that using a jumbo drill to test was common, safe, and accepted throughout the mining industry. *Id.* at 948.

My colleagues also conclude that the judge’s reasonably prudent person analysis is deficient because he failed to adequately discuss the existence of the gas analyzers. Slip op. at 8. They point out that Stephan’s report states that “[m]aintaining dependable gas analyzers . . . will

assure that the oxygen content remains insufficient for combustion.” *Id.*, citing R. Ex. I at 5.² However, the judge’s failure to rely on the existence of a backup safety feature does not impair his analysis as to whether a leak rendered the system unsafe. The Commission has often pointed out the prophylactic nature of the Mine Act regulations. In *Alabama By-Products*, for example, we emphasized that “Congress intended the Mine Act to both remedy existing dangerous conditions and prevent dangerous situations from developing.” 4 FMSHRC at 2131 (citation omitted). In that case, there were only 13 frozen rollers, *id.* at 2128, and at the time of the citation, the belt was “wet and fire-resistant,” the area was “adequately rock-dusted and ventilated,” and “coal accumulations were not then present.” *Id.* at 2131. The Commission pointed out that these factors, relied upon by the operator, were “not controlling as to whether an unsafe condition existed.” *Id.* Rather, “these factors were appropriately considered in determining the ‘gravity’ of the violation when a penalty is assessed.” *Id.*³ We cautioned, furthermore, that “it was not necessary for the inspector to wait until the feared hazard fully materialized before directing remedial action.” *Id.*

The limited significance of backup safety features in reducing liability was also addressed in *BHP Minerals Int’l, Inc.*, 18 FMSHRC 1342 (Aug. 1996). In that case, the Commission concluded that the operator violated a regulation requiring that circuit-breaking devices or fuses be installed to protect against short circuits and overloads. *Id.* at 1347. Although overcurrent protection was also provided by a thermal breaker, we rejected the argument that this “functioning backup system” precluded liability. *Id.* at 1346. Similarly, the existence of gas analyzers in the GCI system does not transform a defective system (that is, a system designed to be enclosed, but which has a hole), into one maintained “in safe operating condition.”⁴

The majority points out that neither the MSHA inspector nor the MSHA expert “conducted any actual testing, simulation, or computational analysis of the GCI system” and

² The gas analyzers consist of sensors at three locations which monitor the levels of oxygen, carbon monoxide, and methane and make some temperature readings. Tr. 95.

³ The penalty in this case is only \$55 (the minimum penalty at the time of the citation). 25 FMSHRC at 231. In assessing the penalty, the judge obviously took into account the fact that the hole resulted from one sheared bolt. Moreover, the Secretary acknowledged that the violation was of low gravity. *Id.*

⁴ The limitations of the gas analyzers were pointedly illustrated in the Stephan report which explained that the GCI operates without this safety feature “when maintenance problems occur.” R. Ex. I at 2-3. When the analyzers are disabled, “a handheld device is used to read oxygen levels intermittently and only at specific points within the system.” *Id.* at 3. The report describes an incident in which the gas analyzer was disabled “from 1:30 p.m. until 2:21 p.m.” and after resuming operation “the reading for oxygen rose to 17.35 percent, indicating that air had been leaking into the system.” *Id.* Because “the computers maintain the last correct oxygen reading” while an analyzer is disabled, “there were no alarms or automatic remedial measures taken as the oxygen concentration increased.” *Id.* at 2-3.

instructs the judge to consider this lack of objective test data on remand to determine what weight to give the opinion testimony. Slip op. at 7. However, the judge already addressed this issue in his decision. He explained that “[w]hile it is true that no actual tests were taken inside the one-half inch hole to determine the oxygen levels inside the GCI system, I find that the inferences made by MSHA’s expert, Clete Stephan, were rational and were sufficient to prove that unsafe levels of oxygen were in fact entering the GCI system, and that the same inferences would be made by any objective reasonably prudent person.” 25 FMSHRC at 230.⁵

My colleagues also fault the judge’s analysis for its failure to reference Stephan’s report of June 2000. Slip op. at 8. They consider the report to be an important factor which a reasonably prudent person at this mine would have considered. *Id.* Unfortunately, my colleagues rely on certain unfounded assumptions regarding the report. For instance, they assume that 28 holes were present in the GCI system at the time Stephan examined it. *Id.* at 8. They conclude, moreover, that because Stephan did not issue his report until 10 months later, he could not have considered the 28 holes to be much of a hazard. *Id.* at 8-9. That being the case, they question whether a reasonably prudent person would conclude that a single hole rendered the system unsafe. *Id.*

My colleagues misconstrue the Stephan report. Although a complaint of 28 leaks by the UMWA (among other problems) prompted Stephan’s visit to the mine, there is no evidence he observed any leaks at those locations. Indeed, at the hearing, Stephan testified that “[a]t the time of this particular evaluation, I don’t recall seeing any of those twenty-eight locations continuing to leak. It was my belief at that time that they had all been sealed.” Tr. 145-46. In addressing the UMWA’s concerns, the report states that “[p]rudent engineering practice is for these 28 locations to be sealed. This action would allow for the GCI atmosphere to remain separate from the outside air, as intended.” R. Ex. I at 5.

Finally, I return to the central facts regarding this violation: it is undisputed that the safety of the GCI system depends upon its ability to maintain the oxygen level below a certain level (12%, according to Stephan, Tr. 86, 91; 10% according to the operator’s expert. Tr. 156). It accomplishes this by creating an enclosed system, which is designed to prevent oxygen from entering except at certain planned locations. Tr. 86, 112, 146. Stephan maintained that any unplanned hole created a hazard and justified MSHA’s determination that the system was not “maintained in safe operating condition.” Tr. 146.

My colleagues point out that this citation involves only one hole or leak. Slip op. at 9. Admittedly, the likelihood of an explosion resulting from a single leak is small. (The \$55 penalty reflects that fact.) But do we really want to require an MSHA inspector to wait until the feared hazard has a reasonable likelihood of occurring? Are we not thereby effectively preventing MSHA from enforcing this standard until the violation is considered “significant and

⁵ Surely my colleagues do not mean to imply that MSHA cannot issue a citation until it has verified that the oxygen inside the hole has reached the level necessary to support an explosion.

substantial?”⁶

As the Commission has stated in discussing a similar regulation, 30 C.F.R. § 56.9002 (1987)⁷ requiring that “[e]quipment defects affecting safety shall be corrected before the equipment is used,” “the language ‘affecting safety’ has a wide reach,” *Ideal Cement Co.*, 12 FMSHRC 2409, 2415 (Nov. 1990), and the effect on safety “need not be major or immediate” to come within the regulation’s reach. *Id.* Being mindful of that admonition, I respectfully dissent.

Mary Lu Jordan, Commissioner

⁶ A violation is significant and substantial when there is a “reasonable likelihood that the hazard contributed to will result in an injury or illness of a reasonably serious nature.” *Mathies Coal Co.*, 6 FMSHRC 1, 3-4 (Jan. 1984), quoting *Cement Division, National Gypsum Co.*, 3 FMSHRC 822, 825 (Apr. 1981).

⁷ 30 C.F.R. § 56.9002 (1987) was revised as of July 1, 1988, and transferred along with 30 C.F.R. §§ 57.9002, 56/57.9001, and 56/57.9073 to 30 C.F.R. §§ 56.14100 and 57.14100. 53 Fed. Reg. 32,497, 32,504 (Aug. 1988).

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